Space Weather Forecast

Issued on Friday 15 November 2024 at 13:06 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: Isolated Minor/Moderate radio blackouts (R1/R2) possible. Slight chance of Minor Geomagnetic Storms.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Moderate during the past 24-hours with the peak flare a Moderate flare peaking at 15/0146 UTC from sunspot region AR3893.

There are four sunspot regions on the visible disc. The intermediate spots within the largest sunspot AR3889 have increasingly diminished, although magnetic complexity remain visible, with the apparent simplification of this region continuing. The remaining regions all remain small and simple.

No Coronal Mass Ejections (CMEs) observed over the past 24 hours are considered to have an Earth-directed component.

Solar Wind / Geomagnetic Activity: Solar winds were between 360-420km/s. The interplanetary magnetic field (IMF), Bt, initially persistently moderate, saw a very gradual decline towards weak levels. The north-south component, Bz was predominantly negative at weak to moderate levels. Geomagnetic activity was Quiet to Unsettled (Kp 2-3), with an Active (Kp 4) interval 14/1800-2100 UTC.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low to Moderate activity expected, with a chance of Moderate flares and a slight chance of Strong flares, mostly from the largest sunspot.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs currently feature in the forecast.

Background to slightly elevated solar wind speeds are expected, although from late Day 3 (17th) there is a chance of elevated wind speeds of around 500km/s occurring with a further connection to faster solar winds. Geomagnetic activity is expected to be generally Quiet to Unsettled (Kp 2-3) initially, with a chance of Active (Kp 4) intervals and a slight chance of isolated G1/Minor Geomagnetic Storm (Kp 5) intervals. From later Day 3 (17 Nov) activity activity expected to increase

---

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.

slightly, becoming Unsettled to Active (Kp 3-4) with an increased chance of isolated G1/Minor Geomagnetic Storm (Kp 5) intervals.

Energetic Particles / Solar Radiation: High energy proton flux is most likely to remain at background levels with Solar Radiation storms unlikely. There is a slight chance of S1/Minor solar radiation storms due to the potential for flaring from the largest sunspot group as it rotates westward across the Sun.

Geomagnetic Storms

Geomagnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	10	20	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X-Ray Flares

X-Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 (M Class)	Yes	30	30	40	40
Very Active	R3-R5 (X Class)	No	5	5	10	10

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.

Solar Radiation Storms (High Energy Protons)

Radiation Storms Probability (Exceedance)	Level ($cm^{-2}sr^{-1}s^{-1}$)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	**≥ S1**	No	5	5	10	10
Very Active	**≥ S3 ***	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.